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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,573	12/08/2003	Andrew J. Olsen	031383-9092 US001	3046

23409 7590 07/11/2005

MICHAEL BEST & FRIEDRICH, LLP
100 E WISCONSIN AVENUE
MILWAUKEE, WI 53202

EXAMINER	
KIM, TAE JUN	

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,573	OLSEN, ANDREW J.	
	Examiner	Art Unit	
	Ted Kim	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 02/23/04 05/06/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 9, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Howard et al (2,680,753). Howard et al teach a combustion turbine engine suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 273 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge 281, 282 disposed within the outer housing and defining an inner space, the insulation cartridge including a wall 281, 282 and a core and operable to at least partially thermally insulate the outer housing from the flow of high-temperature gas; and a turbine rotor 162, 165 disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; the wall 65, 281 or 64, 282 of the insulation cartridge substantially encapsulates the core; a method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing.

3. Claims 1, 3, 9, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Collman et al (3,077,074). Collman et al teach a combustion turbine engine suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 101 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge 302, 166 disposed within the outer housing and defining an inner space, the insulation cartridge including a wall and a core and operable to at least partially thermally insulate the outer housing from the flow of high-temperature gas; and a turbine rotor 23, 42 disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing. Collman et al further teach the housing material is a casting (col. 4, lines 5+).

4. Claims 1, 6, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Savonuzzi (3,167,914). Savonuzzi teaches a combustion turbine engine suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 11 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge disposed within the outer housing and defining an inner space, the insulation cartridge including a wall 23 and a core 123 and operable to at

least partially thermally insulate the outer housing from the flow of high-temperature gas; and a turbine rotor 51 disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing; the insulation material is ceramic (col. 6, lines 49+).

5. Claims 1, 9, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gordon (1,960,810). Gordon teaches a combustion turbine engine suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 122 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge 86, 11 disposed within the outer housing and defining an inner space, the insulation cartridge including a wall and a core 80 and operable to at least partially thermally insulate the outer housing from the flow of high-temperature gas; and a turbine rotor disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing

6. Claims 1, 9, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bell (4,387,563). Bell teaches a combustion turbine engine suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 10 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge 138 disposed within the outer housing and defining an inner space, the insulation cartridge including a wall 44 and a core and operable to at least partially thermally insulate the outer housing from the flow of high-temperature gas; and a turbine rotor 40 disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing.

7. Claims 1, 3-6, 8, 9, 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Haje et al (6,315,520). Haje et al teach a combustion turbine engine (gas turbine col. 1, lines 21+ is a combustion turbine) suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 10 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge 22 disposed within the outer housing and defining an inner space, the insulation cartridge including a wall 20, 24 (Fig. 2) or 24b (Fig. 3) and a core 22 and operable to at least partially thermally insulate the outer housing from the flow of high-temperature gas; and

a turbine rotor disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing. The outer casing 24 or 24a may be made of cast iron or steel (col. 6, lines 66-col.7, lines 17). The insulation S may be made of sand (col. 6, lines 53+), which is known in the art to be a ceramic material. Wall 20 is an alloy steel (col. 6, lines 66+).

8. Claims 1, 9, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 745,795 of the IDS. GB '795 teaches a combustion turbine engine suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 1 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge 2 disposed within the outer housing and defining an inner space, the insulation cartridge including a wall (no number) and a core 2 and operable to at least partially thermally insulate the outer housing from the flow of high-temperature gas; and a turbine rotor disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core

space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 11, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the above applied art in view of Nash et al (6,598,400). The applied prior art teach an insulated gas turbine engine assembly but does not specifically teach the use of a microturbine. Nash et al teach a microturbine assembly comprising a compressor 14 operable to produce a flow of compressed air; a recuperator in fluid communication with the compressor to receive the flow of compressed air, the flow of compressed air being preheated within the recuperator 26 to produce a flow of preheated compressed air; a combustor receiving the flow of preheated compressed air and operable to produce a flow of products of combustion, the flow of products of combustion having a temperature that generates thermal forces and a pressure that generates pressure forces; a turbine 22 driven by the flow of products of combustion, the turbine 22 discharging the flow of products of combustion to the recuperator 26 to preheat the flow of compressed air; a housing at least partially enclosing the turbine and including an inner surface; a generator 30 coupled to

the turbine, the generator 30 driven by the turbine at a speed to output electrical power. Nash et al do not teach an insulation cartridge positioned within the housing, the insulation cartridge at least partially isolating the housing from the flow of products of combustion such that the housing inherently absorbs a majority of the pressure forces and the insulation cartridge inherently absorbs a majority of the thermal forces. The above applied prior art an insulation cartridge which at least partially isolating the housing from the flow of products of combustion such that the housing absorbs a majority of the pressure forces and the insulation cartridge absorbs a majority of the thermal forces. It would have been obvious to one of ordinary skill in the art to employ an insulation cartridge, as applied above, in order to at least partially isolating the housing from the flow of products of combustion such that the housing.

11. Claims 3-5, 8, 13-15, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the above prior art in view of Devers et al (3,928,963) or Haje et al (6,315,520). The above prior art teach the outer casing but do not teach it is a casting of cast iron or steel nor the insulation wall being of alloy steel. Devers et al teach an outer casing made of cast iron (see col. 1, lines 4+) is old and well known in the art. Haje et al teach an outer casing made of cast iron or steel and the insulating casing being of alloy steel is old and well known in the art. It would have been obvious to one of ordinary skill in the art to employ a casting of cast iron or steel, as a well known material used in the art.

12. Claims 6, 15, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the above prior art in view of Savonuzzi (3,167,914) or Haje et al (6,315,520). The prior art teach an insulator but do not teach it is ceramic. Savonuzzi teaches a ceramic insulator 123. Haje et al teach a ceramic (sand) insulator 22, S is old and well known in the art. It would have been obvious to one of ordinary skill in the art to employ a ceramic insulator as a well known type of insulator used in the gas turbine art.

13. Claims 1, 3-6, 8, 9, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haje et al (6,315,520) in view of either Savonuzzi (3,167,914) or Collman et al (3,077,074). Haje et al teach a combustion turbine engine (gas turbine col. 1, lines 21+ is a combustion turbine) suited to operation in response to a flow of high-temperature gas, the combustion turbine engine comprising: an outer housing 10 including walls that define an inlet, an outlet, and an inner surface; an insulation cartridge 22 disposed within the outer housing and defining an inner space, the insulation cartridge including a wall 20, 24 (Fig. 2) or 24b (Fig. 3) and a core 22 and operable to at least partially thermally insulate the outer housing from the flow of high-temperature gas; and a turbine rotor disposed substantially within the inner space and rotatable in response to the flow of high-temperature gas; method of assembling a turbine for use in a combustion turbine engine, the method comprising: providing a housing including an inlet, an outlet, and an inner surface; forming an insulation cartridge having a wall that defines a core space; positioning an insulating material within the core space; inserting the insulation cartridge into the turbine casing; and supporting a rotor for rotation within the housing.

The outer casing 24 or 24a may be made of cast iron or steel (col. 6, lines 66-col.7, lines 17). The insulation S may be made of sand (col. 6, lines 53+), which is known in the art to be a ceramic material. Wall 20 is an alloy steel (col. 6, lines 66+). The gas turbine of col. 1, lines 21+ is believed to be a combustion turbine. In order to obviate any doubt, Savonuzzi (3,167,914) or Collman et al (3,077,074) are cited to show that gas turbines using combustion gases, i.e. a combustion turbine, is a well known type of gas turbine. It would have been obvious to one of ordinary skill in the art to make the turbine of Haje et al, a combustion turbine, as a well known type of gas turbine used in the art.

14. Claims 2, 7, 10, 12, 17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the above applied prior art. The applied prior teach the structural features but do not necessarily teach the claimed ranges. However, the claimed ranges are deemed an obvious matter of finding the workable ranges in the art. It would have been obvious to one of ordinary skill in the art to employ the claimed ranges as an obvious matter of finding the workable ranges in the art.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 703-872-9306 for Regular faxes and 703-872-9306 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at http://www.uspto.gov/main/patents.htm

Ted Kim	Telephone	571-272-4829
Primary Examiner	Fax (Regular)	703-872-9306
June 27, 2005	Fax (After Final)	703-872-9306
Technology Center 3700 Receptionist	Telephone	703-308-0861
Patents Assistance Center	Telephone	800-786-9199